

CLAIMS

Please cancel claims 1-40, 46-48 and 54-87 without prejudice. Please amend the claims as follows:

Claims 1-40 (cancelled)

41. (currently amended) A transmitter, comprising
a serial-to-parallel transmitter structured to transform a single serial bit stream
comprising messages for a plurality of communication devices into a plurality of bit streams;
a time division modulator structured to perform time division modulation on each of the
plurality of bit streams;
a filter structured to apply a required pulse shaping to each of the plurality of bit streams;
a frequency shifter structured to shift each of the plurality of bit streams in frequency by a
required amount; and
a summer structured to sum the plurality of bit streams into a single transmit signal;
~~The transmitter of claim 40,~~ wherein the time division modulator comprises, for each bit
stream;
a sub-block repeater ~~configured~~ structured to take a sub-block of data from the bit stream
and form a new sub-block comprising the original sub-block repeated two or more times;
a block terminator ~~configured~~ structured to add a termination prefix to the new sub-block;
and
a sync inserter ~~configured~~ structured to periodically insert a synchronization code into the
bit streams.

42. (currently amended) The transmitter of claim 41, wherein the time division modulator further comprises for each bit stream a sub-block scrambler ~~configured~~ structured to scramble the new sub-block generated by the sub-block repeater.

43. (currently amended) The transmitter of claim 42, wherein the time division modulator further comprises for each bit stream a block repeater ~~configured~~ structured to generate another new sub-block comprising the terminated new sub-block repeated two or more times.

44. (currently amended) The transmitter of claim 43, wherein the block repeater is further ~~configured~~ structured to scramble the new sub-block that it generates.

45. (currently amended) The transmitter of claim 41, wherein the block terminator is ~~configured~~ structured to perform block termination using a cyclic prefix or a known sequence prefix.

Claims 46-48 (cancelled)

49. (currently amended) A transmitter, comprising:
a serial-to-parallel transformer structured to transform a single serial bit stream
comprising messages for a plurality of communication devices into a plurality of bit streams;
a frequency division modulator structured to perform frequency division modulation on
each of the plurality of bit streams,
a filter structured to apply a required pulse shaping to each of the plurality of bit streams;

a frequency shifter structured to shift each of the plurality of bit streams in frequency by a required amount; and

a summer structured to sum the plurality of bit streams into a single transmit signal;

The transmitter of claim 48, wherein the frequency division modulator comprises, for each bit stream:

a sub-block repeater ~~configured~~ structured to take a sub-block of data from the bit stream and form a new sub-block comprising the original sub-block repeated twice;

a block terminator ~~configured~~ structured to add a cyclic termination prefix to the new sub-block; and

a sync inserter ~~configured~~ structured to periodically insert a synchronization code into the bit stream.

50. (currently amended) The transmitter of claim 49, wherein the frequency division modulator further comprises for each bit stream a sub-block scrambler ~~configured~~ structured to scramble the new sub-block generated by the sub-block repeater.

51. (currently amended) The transmitter of claim 50, further comprising for each bit stream a block coder ~~configured~~ structured to code the scrambled new sub-block.

52. (currently amended) The transmitter of claim 51, further comprising for each bit stream an inverse transformer ~~configured~~ structured to generate a transformed sub-block comprising the inverse fast fourier transform of the coded new sub-block, and wherein the block terminator is ~~configured~~ structured to add a cyclic termination prefix to the transformed sub-block.

53. (currently amended) The transmitter of claim 52, wherein the sub-block repeater, sub-block scrambler, block coder, and inverse transmitter are ~~configured~~ structured to be turned on and off as required.

Claims 54-87 (cancelled)

DRAWINGS

Attached please find formal replacement FIGS. 2, 5B and 15, for the originally-submitted FIGS. 2, 5B and 15. The new formal replacement figures add no new matter. Applicant amends the figures as suggested by the Examiner.